

Schuster, ARTHUR, F.R.S., and **Shipley**, ARTHUR E., F.R.S. *Britain's Heritage of Science*. London: Constable and Co.; 1918; pp. xv., 334; price 8s. 6d.

AS this informing, interesting, and attractively written work will no doubt have a great success and be taken as authoritative, it may be mentioned at once that some of the dates have obviously gone wrong in the printing. It is hardly credible, *e.g.*, that Joseph Christopher Gamble lived to be 108 (p. 194), and quite certain that if Stephen Hales lived from 1671-1761 he cannot have become a Fellow of Corpus, Cambridge, in "1602-3" (p. 236). For the rest, the book is easily recognised as belonging to the higher strata of what we have learnt to call "propaganda." It is intended, that is, to impress the British public with the need to honour, support, and endow scientific work in the future by stimulating national pride about the achievements of British men of science in the past. And as it is notoriously difficult to interest the British public in intellectual affairs at all, and probably true that before the War science had (in consequence of its growing technicality and specialisation) lost ground in the estimation of the public, this enterprise must be pronounced timely and sufficiently legitimate. The work, moreover, is commendably free from national chauvinism (though the present reviewer is not competent to judge whether all the claims to priority it contains would be admitted by the historians of science in other countries), and indeed may be said to rebuke it, by telling the remarkable story of the journey Sir Humphry Davy was permitted to make to Paris in the autumn of 1813 and of his honourable reception by the Académie des Sciences, which elected him a Foreign Member and presented him with a gold medal, amid the final agony of the Napoleonic War (pp. 115, 210). The fact that the story now sounds incredible and its repetition seems inconceivable, may be taken as a measure of the moral retrogression of civilisation during the last century; but the story may serve all the better as a striking reminder that the ideal of science, even more definitely than that of religion, is super-national, and as an introduction to a discussion of the vexed and important question how far a nation is entitled to pride itself on the achievements of its great men and to take the credit for them.

This question was first raised by William James—than whom no one had a greater right to raise it—when he pointed out that, biologically speaking, genius was an "accidental variation" so rare, so inscrutable and incalculable, that it could not really be connected with and derived from its environment at all. It is a physiological "sport," which gets by a "back-door" into a social environment which has done nothing to deserve it, cannot ordain or produce it, and can only use (or misuse) it, when it has had the luck to get it.¹

Now this argument not merely establishes, as James contended, the *importance* of genius but also its *independence*, and debars society from appropriating it. For if any sort of genius may spring up anywhere, without having any traceable connection with the social conditions, how can a society lay claim to it? It did not try to breed it, it did not know how to produce it, it could not reckon on it, it did not lay itself out to generate it. Nor, as eugenicists so justly complain, did it even try to improve its chances of getting an occasional genius by so arranging itself as to recruit itself preferentially from its best members. It cannot even be said that societies are zealous or skilful in making the best of the ability which happens to "take birth" within their borders, by constructing a *carrière ouverte aux talents*. Although they all have an obvious interest in facilitating the ascent of capacity, they all contrive to impede

¹ Cf. *The Will to Believe or Great Men and their Environment*, and the *Principles of Psychology*, II., 626 f.

the rise of the cream to the top of the social mixture, and skim it off, as if it were scum, when it gets there. The utmost that can be said on behalf of any social order is that it does not suppress genius altogether, though it usually recognises it only after death, and that it sometimes harbours institutions, like the mediæval church and the modern university, in which intellectual eminence is allowed to exist if not to flourish, and is tolerated if not encouraged. But nowhere can one behold a society, nation, or state, which shows by its practice that it regards the advancement of knowledge as one of its primary aims and organises itself resolutely, intelligently, and successfully to achieve it.

As regards the treatment of science the social record is particularly bad. All through the Middle Ages the scientific spirit was suspected of heresy and sorcery, and persecuted accordingly. When it began to be tolerated, it was neglected and left to the caprice of sporadic amateurs who happened to be wealthy enough to indulge in it. When it began to be officially recognised, it was subordinated to a *routine* of teaching and examination, and required to lend itself to commercial exploitation. No country, not even America, has yet contrived so to organise its learned institutions as to render it reasonably probable that the best minds will devote themselves to the advancement of real knowledge and that the best of these will be put in positions in which they can make the best of their powers. On the other hand, the history of science everywhere tells the same tale of shameful persecution and stupid neglect. Athens, the fountain head of Greek civilisation, poisoned Socrates, and drove Anaxagoras, Protagoras, and Aristotle to flee for their lives. Italy tortured Galileo, and burnt Bruno. France exiled Descartes, and guillotined Lavoisier. Even in the middle of the nineteenth century the University of Vienna could persist in ploughing so eminent a "researcher" as Gregor Mendel. England has allowed Roger Bacon to rot in a dungeon and Priestley to be mobbed, while its Royal Society for more than a quarter of a century refused to reward with an F.R.S. A. R. Wallace's part in the establishment of the Darwinian theory, because he was a "free lance" and had taken rather too much interest in spiritualism. On the other hand, it must be admitted that several eminent scientists (including Darwin) have been duly buried in Westminster Abbey, in a thoroughly scriptural manner.

If Science, then, were disposed to stand on her dignity, she might make some pretty scathing retorts to the attempts of Nationalism to annex her. Fortunately, she is more disposed to show gratitude for the crumbs thrown to her from the banquetings of politicians—in the expectation of future benefits. And though it is by a certain illusion that the ordinary man identifies himself with the great ones that have lived in his society, and exalts his self-esteem—often unduly—by contemplating and claiming their achievements, there can be little doubt that the illusion is on the whole a salutary one and tends to social cohesion. As for the great one, he must recognise that society is everywhere organised *for* (though not *by*) the average man, and that it is his duty to endure the martyrdom this necessarily imposes on him, until the immeasurably distant day when the science of eugenics shall have been able to impress itself on politics, and to set him free.

F. C. S. SCHILLER.

Teggart, FREDERICK J. *The Processes of History.* Yale University Press, New Haven. Humphrey Milford, London. Oxford University Press; price \$1.25; pp. ix., 162.

THIS book is an essay on what is conventionally called "the philosophy of history," which starts from the vexed question, Is history a science? and argues that the mere narrative of events should be supplemented with material drawn from geography, economics, and the other sciences of man. Though it does not contain anything strikingly new—unless it